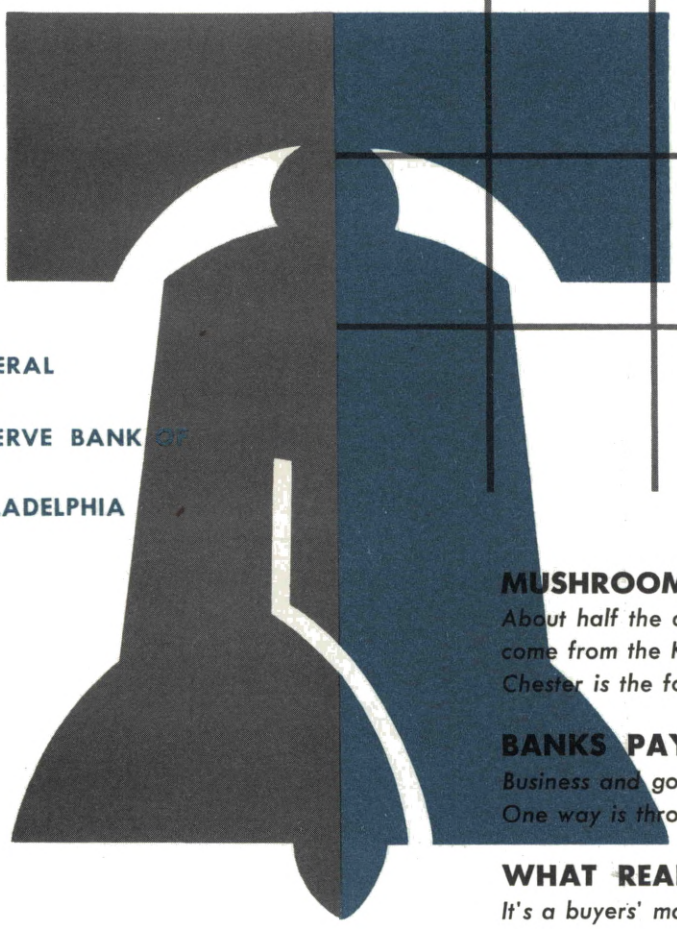
APRIL 1953

business review



FEDERAL RESERVE BANK OF PHILADELPHIA

MUSHROOMS AND ROSES

About half the country's mushrooms and a lot of flowers come from the Kennett Square region in southeastern Pennsylvania. Chester is the foremost horticultural county in the nation.

BANKS PAY MORE FOR TIME DEPOSITS

Business and government are paying more for funds—so are banks. One way is through higher interest rates on time deposits.

WHAT REAL ESTATE MEN TELL US

It's a buyers' market, but the demand is still there. Builders are more conservative, lenders more cautious.

CURRENT TRENDS

Peace prospects cloud outlook; business is good, but . . .

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MUSHROOMS AND ROSES

A rose is a rose, but what is a mushroom? It is not exactly a plant because it does not grow in the soil, and a mushroom is devoid of chlorophyll. Nor is a mushroom a mineral, although propagated mushrooms develop in utter darkness—and growers wear caps with miners' lamps. Nor is it a manufactured product; but most consumers of mushrooms get them out of cans.

Technically, the mushroom is a fungus. Gastronomically, mushrooms are a delight and go well with broiled steak. Economically, mushroom growing is big business in Chester County, Pennsylvania.

A lot of horticultural products are grown in Chester County, especially cut flowers grown under glass—roses, carnations, orchids, chrysanthemums, gardenias, lilies, and other varieties of flowers. Total greenhouse area is almost 2 million square feet. Only fifteen of the country's more than 3,000 counties have a greater area of horticultural glass.

Curiously, mushrooms in Chester County were first grown under glass. Before the turn of the century, a thrifty greenhouse operator conceived the idea of utilizing the space under his benches to grow mushrooms. It worked. This took place in Kennett Square, which up to that time was known as the home of Bayard Taylor, the Bard of the Brandywine. Today, Kennett Square—with a population of less than 4,000—is perhaps better known as the mushroom capital of the United States.

Mushrooms, roses, and other horticultural products grown in Chester County had a wholesale value of almost $9 million, according to the 1950 Census of Agriculture. In a huge volume devoted to horticultural specialties, the Census lists the country's 100 leading counties in the production of horticultural specialties, including propagated mushrooms. Chester County stands on top. It holds first place largely because of its leadership in mushrooms which, however, is not the major source of income of Chester County farmers.

Although the county is famous for its mushrooms, milk checks yield the farmers more revenue than mushroom money by about 30 per cent. This is because Chester County lies in the Piedmont region of southeastern Pennsylvania. Rich soil, abundant rainfall, and sufficiently rolling topography to insure good drainage produce excellent pasturage and high yields of corn for the dairy herds. Proximity to Philadelphia affords a market for the milk. Beef cattle from Texas en route to Eastern markets are fattened to final finish in Chester County's lush green meadows.

Most of the industrial activity is in the Chester Valley. Etched out of limestone, this is a straight and narrow valley that runs slightly northeast to southwest. Through this valley without a river

goes the main line of the Pennsylvania Railroad, which serves Downingtown (a paper mill town) and Coatesville (a steel city—the only city in the county). Phoenixville, a smaller manufacturing center, is on the Schuylkill River, which carves a county border on the northeast.

Three major highways traverse the mushroom county, which is a part of metropolitan Philadelphia. U.S. 30, a heavily traveled east-west highway, follows through the Chester Valley for a considerable distance and parallels the railroad. The Pennsylvania Turnpike enters the county at Valley Forge and pursues a more northerly route across the county. U.S. 1, to the south, enters the county down near the Delaware arc. This is the road that goes through the mushroom region. When you travel south out of Philadelphia on this highway, you go through Chadds Ford—where in the fall of 1777 George Washington was unable to hold off the British in their drive for Philadelphia. The stone house which served as Washington's headquarters has been restored to its Colonial dignity and simplicity. Shortly after passing Longwood Gardens—a famous horticultural show place, open to the public—you see signs offering mushrooms for sale. Before entering Kennett Square, you pass trucks northbound hauling mushrooms to Philadelphia and New York markets. Along Route 1 from Kennett Square through Toughkenamon, Avondale, West Grove, and Oxford, mushroom growing is a major economic activity.

Houses without glass

Contrary to popular belief, the mushroom section of Chester County is not honeycombed with caves, abandoned mines, and quarries for the growing of mushrooms. They are grown in houses, but the houses are quite in contrast with all the glass and vari-colored horticultural splendor of Longwood Gardens. The typical mushroom house is about sixty feet long, twenty feet wide, and twelve feet high. Usually two to twelve or more are built together in a series to form a unit or block. Some of the older houses are frame construction, but most of the newer structures are built with cinder block. Lumber is too costly for modern construction, and cinder block stands up better to the weather. You can always distinguish a mushroom house by the absence of windows—not because mushrooms prefer darkness but because they do not need light, and in buildings without windows it is easier to control inside temperatures. Mushrooms are fastidious about temperature. They also need fresh air, and that accounts for the ventilators seen on the top of most of the mushroom houses. Beside each block of houses is the compost yard which accommodates large heaps of horse manure. This is not used to fertilize the soil as in ordinary agriculture, for in this business the manure compost *is* the soil. Remember, mushrooms are not ordinary plants; they are fungi and they thrive best in a specially prepared compost.

Inside a mushroom house

The inside of a house is a cypress superstructure of shelving with only enough alleyways to afford accessibility to a maximum number of mushroom beds—both running throughout the length of the building. There are usually two tiers of beds, with six beds in each tier, and a catwalk to enable growers to reach the three top layers of beds. The houses are piped for hot-water heat to control the temperature through the cold months, and most of the houses are wired for electric lighting. These are the essentials, in addition to which some of the more venturesome producers are installing air-conditioning equipment.

From bed to basket

Growing mushrooms takes a strong back. There is a lot of hard work required in practically all stages of production—consisting of composting, filling, sweating-out, spawning, casing, picking, and cleaning out to make ready for the next crop. Throughout the growing season, which usually runs from October through May, it takes more labor to produce a pound of mushrooms than an equal amount of almost any other food, including butter, cheese, potatoes, or tobacco.

Composting

The first, and one of the most laborious jobs, is the composting. Growers generally buy 60 or 70 tons of fresh horse manure at a time. This serves as the food or "soil," so to speak, for the mushrooms. But the manure requires extensive treatment or conditioning before it is ready for use. Composting is a process of fermentation or decomposition, during which complex physical and chemical changes render manure *specific* for mushrooms and less hospitable for other organisms. The manure must be turned—that is, completely forked over and aerated three or four times at intervals of about a week. Turning is done either by hand or with a "turner," a machine which elevates the manure and beats it into fragments by means of a cylinder from which the manure falls into a new pile. Even with the aid of a turner, manure has to be forked into the machine. If you have ever worked on a farm at manure-spreading time, you know what kind of work this is. The number of turnings varies with differences in the age of the manure received, the moisture, the consistency, and the general speed of fermentation. By the time it has properly decomposed, it has lost not only its reddish color but also all traces of objectionable odor. Composting, which takes about four weeks, is customarily started in August so that the beds are ready to start growth with the advent of cool weather.

Filling

When the compost is ready to be put into the house, a narrow-gauge track is set up, baskets filled with compost are placed on a car, pushed into the house, and dumped into the beds. Each bed is filled to a uniform depth of five or six inches, after which the careful operator cleans up the aisleways to make them as immaculate as his wife's living room floor. Sanitation and good housekeeping pay off in high yields per square foot of bed space.

Sweating out

Sweating out, as the term implies, is a process of heating or pasteurizing to improve the compost and to kill off all undesirable or "weed" organisms. Artificial heat is sometimes applied in order to bring the temperature of the compost up to about 140 degrees Fahrenheit, and this is another reason why most houses are equipped with hot-water pipes and a heating plant to control temperatures. This process takes three to ten days, the practice varying from one operator to another.

Spawning

After the temperature of the compost has receded to about 80 degrees F., it is time to plant the spawn or mushroom "seed." The spawn is planted at regular intervals to a depth of about two inches.

Unlike ordinary plants which grow from seeds, mushrooms grow from spores, and the art of producing spawn from spores is highly technical and an entirely separate business. Pure culture spawn is ordinarily prepared by inoculating specially prepared bottles of sterilized horse

manure, tobacco stems, rye grain, or other medium with germinated spores of the mushroom. Commercial mushroom growers usually buy their rye-grain spawn or tobacco spawn to insure high-grade "seed." A quart-size bottle of grain spawn plants about 75 to 100 square feet of bed space. Within a very short time, spawn will grow out of the grain and run in great profusion through the entire bed in a vast network of blue-grey, threadlike strands called mycelium. In about four weeks the run of spawn has permeated the entire bed and the next step is casing.

Casing

Casing consists of covering each bed with about an inch of fine soil slightly moistened with water. Topping the beds with a layer of casing soil serves several purposes. The casing soil, which is watered frequently, helps to prevent the compost from drying out too rapidly; furthermore, vegetative spawn is encouraged to "fruit" when it encounters a medium deficient in food. This is nature's way to compel the mushrooms to reproduce—casting out spores to perpetuate the species.

Approximately two or three weeks after casing, during which time the beds are periodically watered and the temperature kept between 55 and 60 degrees F., tiny white pinheads begin to poke up through the casing soil into the darkness. In about twelve days the pinheads mature to full-grown mushrooms. It is a beautiful sight when a shaft of light is thrown across a bed full of snowy white buttons maturing in the silent darkness filled with mushroom fragrance.

Mushrooms appear in rhythmic cycles or flushes, called "breaks." The first few breaks account for the greatest proportion of the total yield. Afterwards, the yield diminishes steadily with each succeeding break until it is no longer profitable to keep the beds in bearing. Profit in mushroom culture lies in the ability of the grower to prolong the producing period until he has extracted practically all of the nutrition from the compost.

Picking and trashing

The time to pick is just before the veil breaks—that is, before the expanding cap opens like an umbrella. To know when mushrooms are ready to pick, you must know your fungi. In picking, the grower goes through the aisleway with two baskets and a paring knife. A slight twist on the cap removes the mushroom, which is then held over a trash basket and the portion of the stem to which dirt is clinging is cut off and the mushroom is placed into a clean basket. Holes left in the bed where the mushrooms have been removed are filled with sterilized soil, and all loose roots, butts, and other dead tissue must be removed. This is known as trashing and is essential to good yields. Picking mushrooms sounds like an easy job, but some growers say it is the most tiresome and backbreaking of all because it takes a lot of reaching and stooping to work the beds at various levels—knee-high, hip-high, and shoulder-high.

Cleaning out

When the crop is done, the entire mushroom house is cleaned out. The spent compost is removed from the beds, which should then be thoroughly scrubbed, cleaned, and reconditioned for the next crop. Loose boards are washed and laid out in the sun to dry. Before the house is filled again it is usually sprayed with a suitable disinfectant such as a copper sulphate solution, formaldehyde, or some other fungicide to eradicate all spores of disease-causing fungi. After the house has been cleaned out and fumigated, which is a laborious task, the operator is ready

to start the cycle of production all over again. Many growers operate on the "two-fill" system in which the cycle, as explained above, is performed twice a year to grow two shorter crops. Under this system, the grower takes a gamble on the weather at the very beginning and at the very end, since operations are begun earlier and the growing period extends later into the spring.

Mushroom culture is more than hard work; it is a tricky business. The manure must be just right—not too long (containing too much straw) and not too short (too rich in droppings), and must not be too wet or too dry and, of course, not too costly. The casing soil must be just right—not too much clay or too much sand, or too much organic matter; furthermore, it must be neither too sour nor too sweet, neither too coarse nor too fine, and it should be steamed before using to render it free from disease organisms or other pests. Beds must be watered periodically to maintain just the right amount of moisture, because too much moisture or too much dryness is harmful. Mushrooms are sensitive and delicate organisms. They need fresh air but cannot stand drafts, and they flourish only within narrow limits of temperature which must be controlled with great care at all stages of growth. They are subject to all manner of diseases and pests, which the grower must identify and eradicate as best he can. The pampering some parents given an only child is nothing compared with the pampering mushrooms demand.

The best way to get good mushrooms is to buy them. That avoids all the worries about the high price of manure, the shortage of labor, the acidity of casing soil, the ravages of pests and diseases, the changeability of the weather, the disposition of spent compost, and the periodically glutted markets. It is easy to get a book on how to grow mushrooms, but you can't grow mushrooms out of a book. Mushroom culture is more of an art than a science. Successful growers are those who served an apprenticeship with a successful grower, and no two growers follow precisely the same technique. It is a highly specialized business and as one Kennett Square producer said: "Each grower must work out his own problems."

Kennett Square

About half of the country's annual 60 million pounds of mushrooms are grown within a 25-mile radius of Kennett Square. Within this relatively small area, which runs across the curved boundary line into northern Delaware, there are approximately 350 producers. Most of the plants, as the mushroom houses are called, are family-owned and operated, with Italian or Quaker ownership predominating. Some are small-sized ventures consisting of three singles or two doubles—a double being a house with four rather than two tiers under each roof. The largest producers operate as many as sixteen or twenty doubles and these are usually the most highly mechanized. Some growers specialize in mushrooms to the exclusion of everything else; others operate mushroom plants in conjunction with dairy farming, cattle feeding, or general farming.

Over the years there have grown up in the Kennett Square area a number of special business organizations in connection with the mushroom industry. There are several firms that specialize in the production of pure culture spawn. Spawn-making is a highly specialized procedure that requires skilled personnel and technical equipment. Mushroom growers buy their spawn from these firms, that also furnish technical assistance to the growers. The several mushroom supply houses deal in machinery,

tools, equipment, baskets, fungicides, and other supplies needed by mushroom growers. There are a number of large trucking firms that haul fresh mushrooms to the market. and there are also a number of canneries in the area, specially equipped to handle mushrooms in large volume.

Bankers in the area, familiar with mushroom operations, supply the growers with credit tailored to their peculiar needs. The grower borrows from his bank to get working capital in late August or early September to begin filling and planting operations. At that time of the year the grower needs working capital to meet large outlays for labor and manure purchases. Bank loans are later repaid in installments as the season's crop progresses to maturity. The local banks also assist the growers with loans for the purpose of improving their plants and for purchasing machinery and equipment.

Several mushroom growers' cooperatives were established when heavy shipments of fresh mushrooms depressed prices below costs of production for many of the growers. The cooperatives, owned by the growers, provide a number of services for them. They operate a truck service to collect mushrooms from members and deliver the same fresh mushrooms to the terminal markets. They distribute grain spawn impregnated with mushroom fungus, disinfectants, baskets, and other supplies needed by growers. They operate a canning plant providing an alternative outlet for mushrooms. The cooperatives also conduct research to improve the spawn, control disease, and otherwise improve the yield for the growers.

With the growth of specialized knowledge in the trade, it is easy to understand how the industry, once started, continued to expand. Any standard text on mushroom-growing points out that the ideal site for a mushroom farm should adjoin a good road to give easy access to the plant, have a gentle slope for good drainage in composting, be near a railway station for unloading in-shipments of manure, be near a large city to afford a market for the mushrooms, and have a suitable supply of water, electricity, and suitable soil for casing. Kennett Square has all of these requirements, but so do many other areas. For some years Kennett Square "know-how" tended to stay at home, but by-and-by it began to migrate.

HOW IT ALL BEGAN

The prominence of Kennett Square as the country's leading center of mushroom culture is largely a matter of historical accident. In 1890, a Kennett Square greenhouse operator, while making deliveries of his greenhouse products to markets in New York and Philadelphia, learned about the growing popularity of mushrooms, which were then imported from England and France for serving in metropolitan hotels and restaurants to people with European appetites. To avoid stooping, greenhouse operators grew their products on long rows of benches about three or four feet above ground. This enterprising operator sent to England for the spawn and began experimenting with mushroom growing in the waste space below his benches, which he covered with dark sheeting to keep out the light. He made a modest profit and soon other farmers began to do the same thing. When the limited space under the benches of the greenhouse became inadequate, larger quarters were provided by the construction of specially designed frame mushroom buildings, now so prominent in that area. That is how it all began.

Mushroom growing in other areas

In some of the faded literature on the subject of mushrooms, you will read that the Kennett Square region produces 85 per cent of the total output of the country. Alas, this is no longer true. As mentioned previously, the present proportion is about 50 per cent. This does not mean that Kennett Square is going down-hill, but that more and more mushrooms are being grown in other areas.

ESTIMATED GROWING SPACE AVAILABLE—1949

State	Thousand square feet
Pennsylvania	19,025
New York	3,148
Illinois	1,505
Ohio	1,375
Delaware	850
Maryland	625
Michigan	458
California	390
Missouri	310
Indiana	280
Massachusetts	280
New Jersey	240
Washington	130
Connecticut	110
Minnesota	105
Colorado	100
Other states	403
	29,334

(Other states with less than 100,000 square feet each are Rhode Island, Tennessee, Kentucky, Wisconsin, Oregon, New Hampshire, Virginia, Iowa, Vermont.)

Mushrooms are now being produced in more than half the states of the country, but there is a heavy concentration of capacity in Pennsylvania, New York, Illinois, Ohio, and Delaware, as shown in the table. These five states account for 90 per cent of the total square footage of mushroom beds. Pennsylvania alone accounts for 65 per cent of the total, primarily because of the importance of the industry in Chester County, but there is also a large producer in Butler County, north of Pittsburgh, and there is a colony of about twenty-five producers in Berks County, whose total output amounts to almost one-tenth of the value of Chester County producers. New York state, which ranks next to Pennsylvania in capacity and output, was the first to offer substantial competition to the Kennett Square growers. Most of the New York production is in the Hudson River Valley, where it developed in response to the large demand for fresh mushrooms in New York City—long the largest and the best market for the Chester County growers.

Invariably, mushroom centers spring up in an area that is easily within reach of a large metropolitan market by fast motor service. This is imperative because of the perishability of the product. Fresh mushrooms must get to the market within twenty-four hours after picking. Kennett Square growers, of course, enjoy the advantage of accessibility to the markets in New York, Philadelphia, Wilmington, Baltimore, and Washington. Nearness to a market is still an important factor, though it is now somewhat less urgent than formerly because more and more mushrooms are being canned and made up into soup. Mushroom soup and canned mushrooms are sold in all major markets of the United States. Canned mushrooms produced on the West Coast are offering increasing competition to Kennett Square and other Eastern areas.

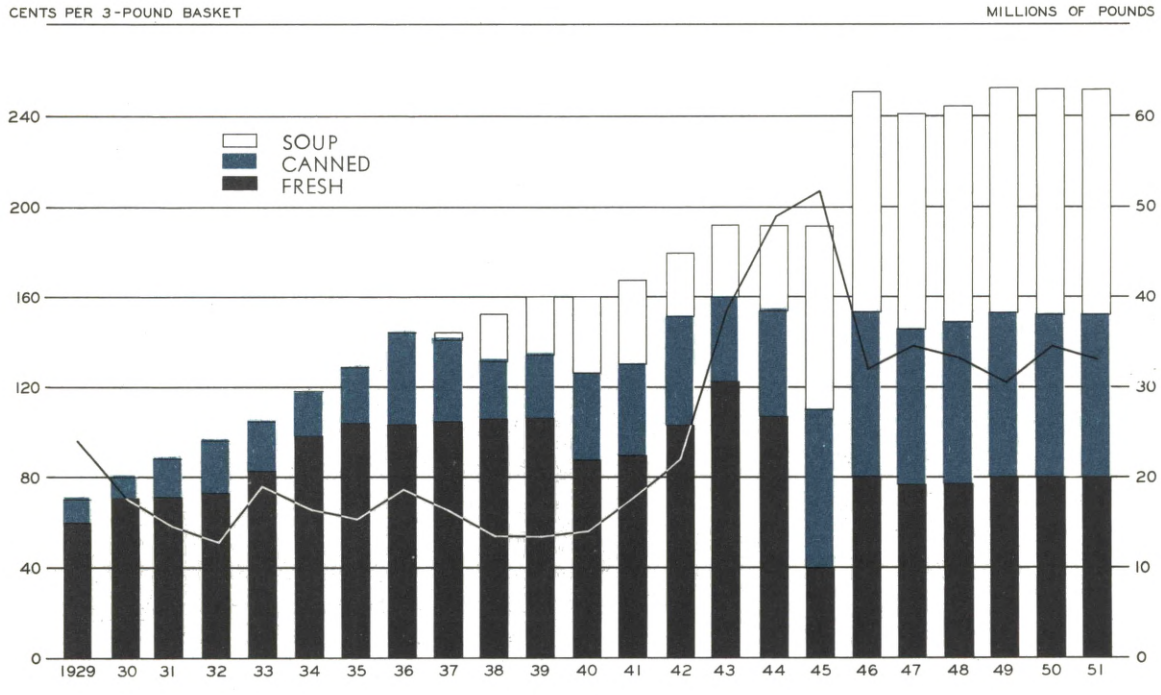
Proximity to a large metropolitan center affords not only a market for mushrooms but also a source of supply of manure, one of the major items in the cost of production. In the days of horse-drawn vehicles, mushroom growers obtained manure from city stables, and large shipments moved into the Kennett Square region by rail from New York and Philadelphia. Shipments into that area now originate from as far west as Chicago, and the added freight for the

longer distances adds to the cost of mushroom growing. Rising costs of this raw material and unscrupulous practices on the part of some dealers (such as watering down to increase the weight) hastened the development of synthetic compost, which more and more growers are using. Synthetic compost is a compound of hay, corncobs, gypsum, and chemicals high in nitrogen content. The mixture is frequently supplemented with brewers' grain or dried chicken manure. Mushroom growers who use synthetic compost can control the mix, which assures more reliable results than manure that varies in composition from one shipment to another. With the decline in the use of horses, hay and corn-cob compost is gradually assuming more importance.

The mushroom industry never "mushroomed"

Although mushrooms grow to maturity very fast, the industry has grown at a rather moderate rate. It took fifteen years for the industry to grow from the 20 million to the 50 million pound level of annual output. Furthermore, there has been practically no growth since 1946, as seen in the accompanying chart. The sudden jump in production from the wartime level of 48 million pounds to the 60 million pound level in 1946

UNITED STATES PRODUCTION AND PRICES* OF MUSHROOMS



*WHOLESALE PRICES OF FRESH MUSHROOMS IN NEW YORK CITY
(Note: 1951 Production Estimated)

was caused, in part, by returning veterans entering the business. And another factor was the stimulus of high wartime prices. The delayed response of increased production to high wartime prices is explained by the shortage of tin for canning, and also the shortage of labor for growing mushrooms. Subsequently, the sudden increase in production was followed by a quick reaction in the price structure, prices declining from more than $2 per 3-pound basket in 1945 to an average of $1.28 in 1946.

Mushrooms go to market in three different ways, and in about equal proportions. Approximately one-third of the mushrooms are marketed as fresh mushrooms, one-third are canned, and another third are put up in the form of soup. Processed mushrooms have done much to expand the market; indeed, the current level of consumption of fresh mushrooms, as shown in the chart, is no higher than it was twenty years ago. The canning of mushrooms, which began at the time of the first world war, has expanded steadily and persistently, but the development of canned mushroom soup, which began about 1935, did even better to expand the market. Mushroom soup has apparently won for itself a permanent place in the American diet, and it has the added advantage that it can be used as a base stock for a variety of culinary preparations. The industry has spent considerable sums of money in advertising to expand the market for its product, with apparently the greatest success in increasing the demand for soup.

Mushroom growers are plagued periodically by low prices and, as the chart reveals, declining prices do not seem to bring about decreased production. An important reason for this is the two- and three-crop systems of growing. Though rising prices bring about expansion in capacity, it appears that once the grower has made his investment in a mushroom plant he is prone to grow two crops or even three crops in a season in the hope of getting additional returns on his investment.

In former years when most growers produced only one crop a year, mushroom prices were subject to rather sharp seasonal fluctuations. Prices were high during the summer months when there was virtually no production, and low during the winter months when large shipments of mushrooms hit the market. Seasonal fluctuations in prices have been reduced somewhat by double and triple cropping, and further reduction in seasonality of output has been attained now that some producers have installed air-conditioning equipment which enables them to produce mushrooms the year round.

Mushrooms have long been prized for their excellent flavor. They play a supporting role in that they increase the palatability of other foods. Only in recent years has the food value of the mushroom itself been given consideration. Independent studies of the nutritional value of mushrooms have established the fact that they are rich in certain vitamins. Niacin (the antipellagra vitamin) content of fresh mushrooms is five to ten times greater than that of vegetables such as spinach, carrots, or tomatoes. Riboflavin (another member of Vitamin B complex) is also present in fairly high amounts. Mushrooms contain more riboflavin than does meat, and more than many vegetables. The protein content of mushrooms compares favorably with that of many other vegetables but of course mushrooms cannot compare in protein content to meat, which is the major source of protein in the human diet.

In Kennett Square, the current mushroom season is always the worst and the next season always the best. That is to say, the growers are

always conscious of their present difficulties, such as high costs and low prices, or low yields when prices are high; but they are always hopeful of better results with the next crop. The region has more than its share of progressive growers who are forever experimenting and trying new procedures. It may be a new formula for synthetic compost, a new chemical for combating pests and diseases, or pushing the beds at slightly higher temperature to hit the market at a favorable time. The grower who is averaging two pounds of mushrooms per square foot of bed space is trying to get his average up to 2½ pounds and the grower who has attained a 2½ pound yield is trying to reach three pounds. Kennett Square is aware of the competition from other areas, but it is still the capital.

FLOWERS THAT BLOOM ALL WINTER

Greenhouses are a familiar sight both on the main highways and the byways of Chester County. Chester is one of the leading counties of Pennsylvania and of the country in growing cut flowers, potted plants, foliage and green plants produced under glass. The county's greenhouses turn out $2¼ million of horticultural products each year. The value of horticultural products is considerably greater than the income derived from the sale of field crops other than vegetables and fruits.

Growers of cut flowers, like growers of mushrooms, must be located near their markets because of the high perishability of their products. This is particularly true of roses. With all their beauty, rose buds are delicate and cannot be shipped very far. Roses, because of their vivid colors and fragrance, are the favorite among cut flowers. In dollar value, roses account for almost a million dollars of the county's almost $2 million worth of cut flowers produced each year.

The big commercial greenhouse operator usually specializes in one variety of flowers. Next to roses in value of output of Chester County cut flowers come carnations, followed by orchids, chrysanthemums, gardenias, and lilies. Among potted plants, hydrangeas rank first, followed by poinsettias, lilies, and azaleas.

Greenhouse operation is highly seasonal, both by nature and convention. Lilies go with Easter, and poinsettias with Christmas. The peak periods for marketing cut flowers are Christmas, Easter, and Mother's Day; so the grower of cut flowers must schedule his operations so as to have his crops maturing at the right time. Seasonality is reflected in prices commanded in the wholesale markets. In the 1940-1949 decade, prices of roses, for example, declined from an index of 128 in January to a low of 77 in July, when greenhouse roses compete with summer flowers.

Horticulture mechanizes

In nature, the important factors causing plants to bloom are temperature and the number of hours of daylight, as every florist knows. With the aid of canvas covering by day and artificial lighting by night, greenhouse operators can delay or hasten the appearance of blooms of certain plants, such as poinsettias and chrysanthemums. One enterprising Chester County grower of chrysanthemums sends them to market every day of the year. The first thing you notice upon entering his greenhouse is a large board full of numbers and symbols which looks like a master schedule and dispatch board of a large automobile factory. Sure enough, it is a dispatch board to control the schedule of operations for each growing area of his five greenhouses. This sug-

gests that the day may soon come when flowers will be grown on the factory basis, using trays on a moving belt to go through the various cycles of plant life in successive departments of the greenhouse "factory." If this sounds absurd, you may be surprised to know that it is already being done in a specially constructed greenhouse in North Carolina where chrysanthemums on moving trays go through a sixteen-week, shoot-to-bloom cycle. The special mass-production greenhouse was designed by a Chester County horticulturalist—the expert who grows chrysanthemums all year round.

A somewhat similar development is taking place in the mushroom industry. It is called the two-zone system. Mushroom culture has two fundamental phases: first, the running of the spawn and, second, cropping of mushrooms. The essence of the two-zone process is that the two phases are separated and carried out as independent operations. To achieve this, movable trays are used rather than stationary beds. Two types of houses are built—one is used to pasteurize with steam the compost-filled trays and subsequently to run the spawn, and the other receives the spawn-filled and cased trays and shelters them during the entire cropping period. In moving the trays from one house to the other the casing is done automatically by machinery. The new technique holds much promise and may be the coming method of cultivation.

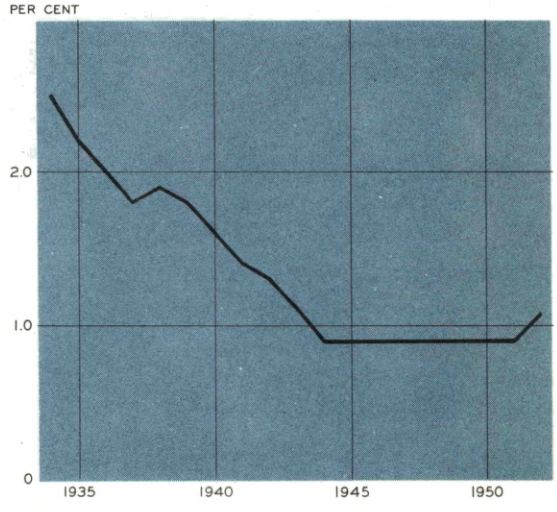
Horticulture, which heretofore has been a phase of agriculture, seems to be taking on more and more of the attributes of manufacturing. Mechanization is becoming the mode in modern horticulture.

BANKS PAY MORE FOR TIME DEPOSITS

Demand for money is high and rising. The supply of money has been fairly tight. Result—the rate of interest that money earns is higher than it has been since the war. The Federal Government, state and local governments, industrialists, builders, and businessmen are paying more for funds. So are bankers. One way in which District bankers are paying more for funds is through higher interest rates on time deposits.

There are at least two ways of measuring interest rates on time deposits. One is to take the total amount of interest paid in a given year and divide it by the average volume of time deposits. The resultant percentage—called the effective rate of interest—is a measure of the rate paid on all time deposits. It is influenced by such factors as the rate of turnover of these

EFFECTIVE RATE OF INTEREST ON TIME DEPOSITS, DISTRICT MEMBER BANKS

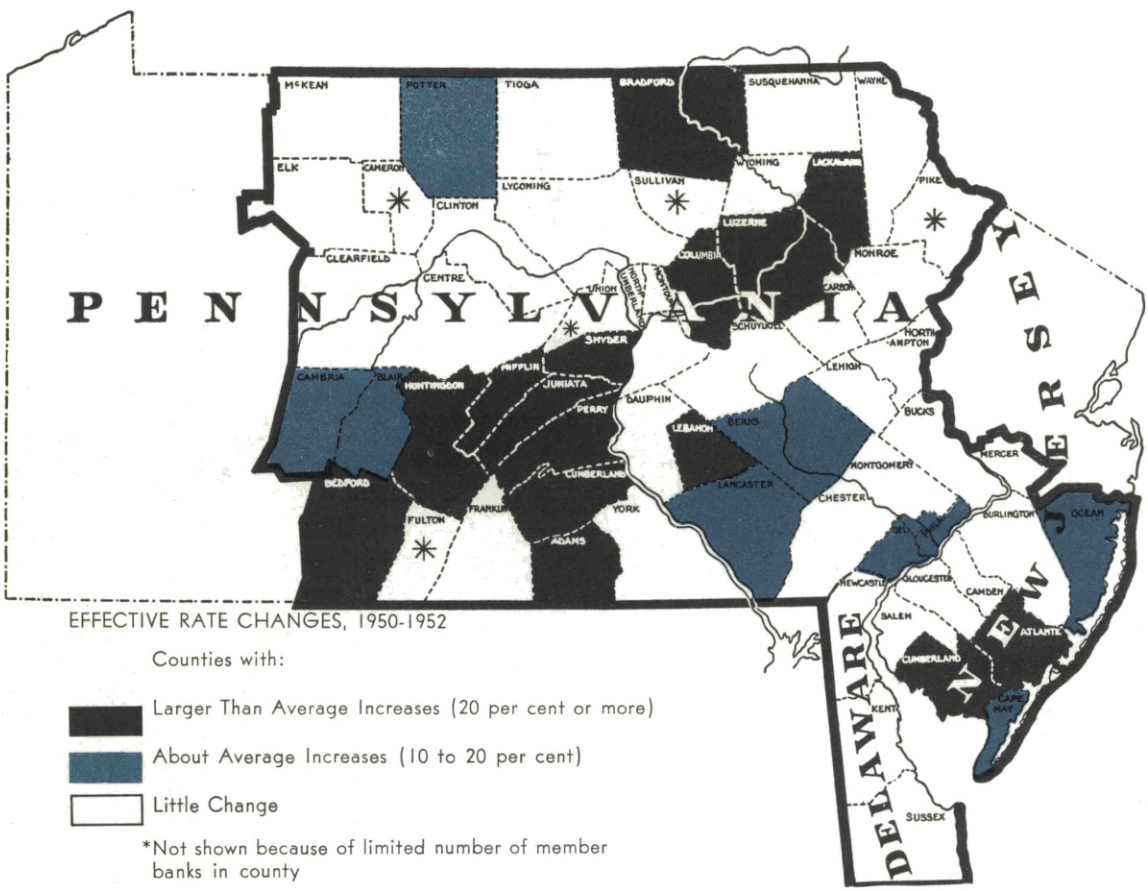


deposits, the method of crediting interest, and the proportion of time deposits in savings accounts and in certificates of deposit, which carry different rates. Another method—familiar to most bankers—is to examine the interest rate banks offer on savings accounts. This method is complicated by the fact that about 15 per cent of the member banks in the District have a graduated schedule of rates for savings accounts.

The chart on the preceding page is based on the effective rate of interest paid by member banks in this District. (Averages of individual bank ratios are used.) It shows that in 1952, for the first time in fourteen years, the rate of interest paid rose. This increase to 1.06 per cent followed an eight-year interval during which the rate paid remained virtually unchanged at 0.9 per cent.

THE PICTURE OF INTEREST RATES

Where Increases Have Occurred Since 1950



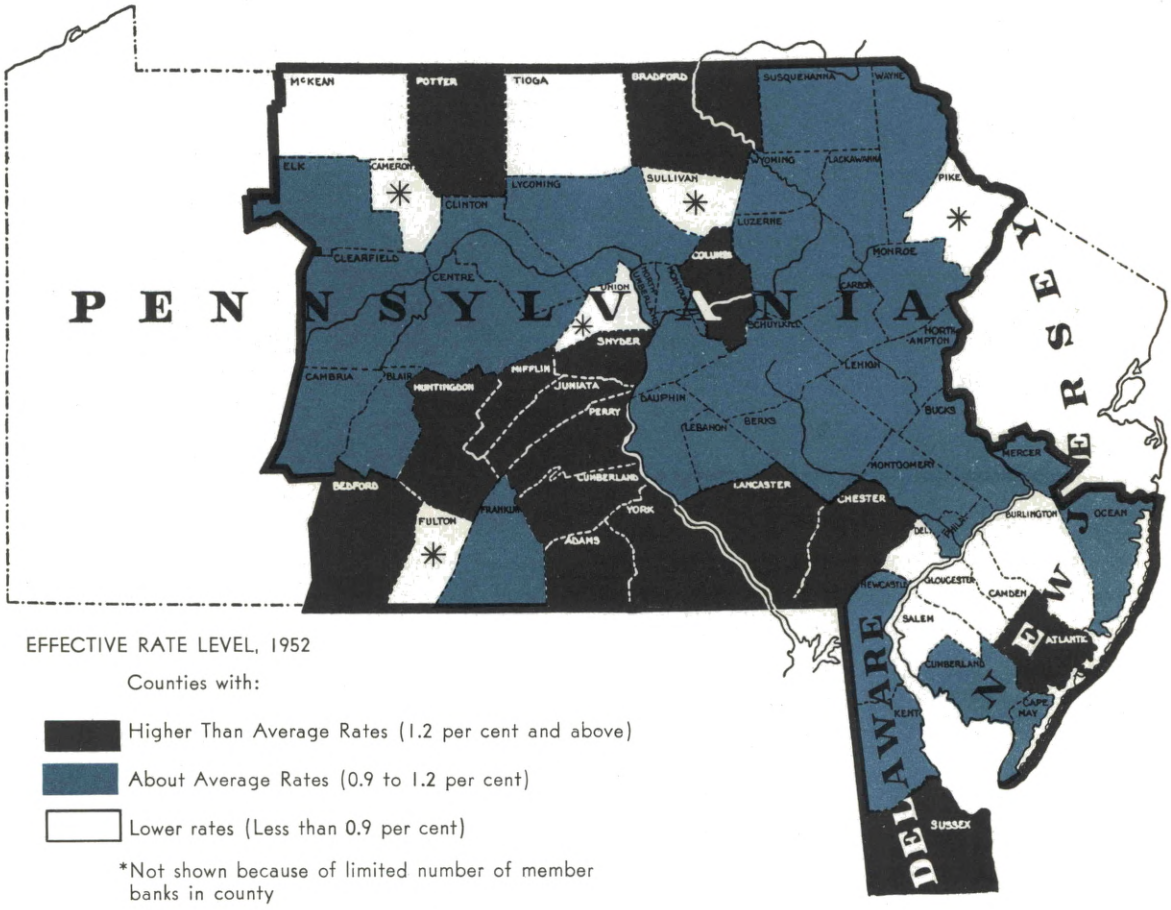
Some areas affected more than others

A look at the map on the opposite page gives an idea of how widespread the increases were within the District. In 24 of the 55 counties, the average rate paid increased by one-tenth or more since 1950, and in 15 counties a rise of at least one-fifth was registered.

Although rising rates occurred in counties in all sections of the District, most of the large increases took place in the ridge and valley section in south-central Pennsylvania where eight contiguous, thinly populated, general farming counties have raised their rates to the point where they are half again as high as in 1950. The counties are Bedford, Huntingdon, Mifflin, Snyder, Juniata, Perry, Cumberland, and Adams. These increases have made this the highest-rate area in the District.

ON TIME DEPOSITS BY COUNTIES

Rates Paid in 1952



EFFECTIVE RATE LEVEL, 1952

Counties with:

- Higher Than Average Rates (1.2 per cent and above)
- About Average Rates (0.9 to 1.2 per cent)
- Lower rates (Less than 0.9 per cent)

*Not shown because of limited number of member banks in county

As can be seen in the second map, eleven connected counties in south-central to southeastern Pennsylvania paid an effective rate of interest on time deposits exceeding 1.2 per cent in 1952. In addition to all the counties named above, York, Lancaster, and Chester counties make up this group. Only five other scattered counties—Bradford, Potter, and Columbia in Pennsylvania, Sussex in Delaware, and Atlantic in New Jersey—paid roughly as high a rate last year.

Of the five other Pennsylvania counties in which large increases occurred, three were in the anthracite region. Banks in Lackawanna, Columbia, and Luzerne counties paid on the average about two-fifths more than in 1950. Another county—Lebanon—is near the high-rate counties mentioned in the preceding paragraph.

Banks in Cumberland and Atlantic counties in New Jersey had a sizable increase in the average rate paid although, generally, rates in New Jersey are not as high as in the rest of the District. The average effective rate paid in 1952 in the Third District portion of New Jersey was 0.91 per cent, as compared with 1.11 per cent in that part of Pennsylvania in this District and 1.07 per cent in Delaware.

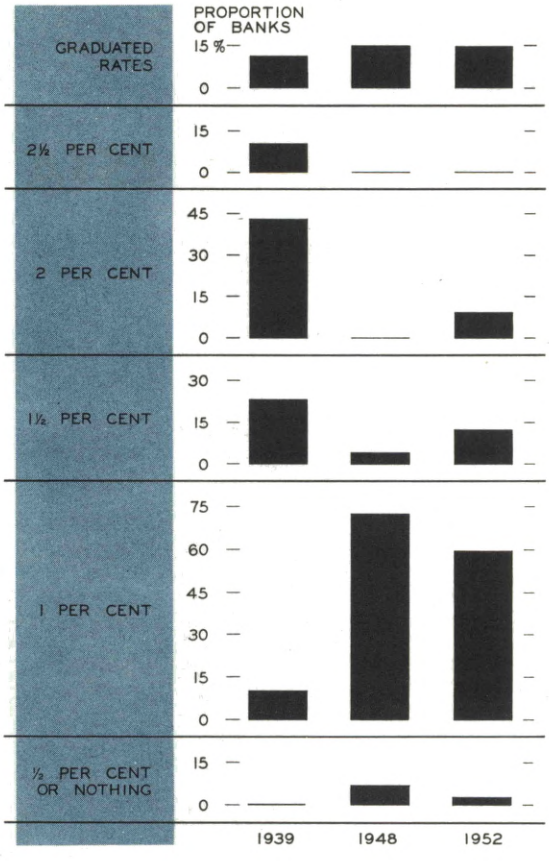
Higher rates offered on savings accounts

Thus far attention has been centered on the effective rate of interest on time deposits. The most important factor influencing the effective rate paid is the interest rate offered on regular savings accounts. Figures for rates offered on savings accounts had to be gathered at different dates during the year, so they do not necessarily show the levels prevailing at the end of the year.

From 1945 until the past year, generally the top rate offered—as distinct from the effective rate—by District member banks on regular savings accounts was 1½ per cent. In 1948, 28 member banks offered 1½ per cent on these accounts and only one or two banks offered more. In 1952 this situation was so altered that at least 60 member banks offered 2 per cent for savings accounts and about 80 member banks offered 1½ per cent. The majority of banks still offer 1 per cent for savings accounts, but the proportion offering less has been more than cut in half. The percentage of member banks offering savers graduated rates on savings accounts—

RATES OFFERED BY DISTRICT MEMBER BANKS ON REGULAR SAVINGS ACCOUNTS

(Selected Years)



usually stepped down as the size of the account increases—has varied little since the war.

In spite of the recent upward trend in interest rates on regular savings accounts, they are not nearly so high as in the pre-war period. In 1939 over half the member banks in this District paid 2 per cent or more for these accounts. Last year about one bank in ten offered that much.

WHAT REAL ESTATE MEN TELL US

Seasoned experience and sound judgment sometimes contribute more to the accurate appraisal of a given situation than cold figures. Current developments at local levels in a market like real estate are particularly susceptible to this sort of treatment. Consequently, we have interviewed a group of representative concerns engaged in building, real estate, and mortgage lending. They tell us that activity in this Federal Reserve District seems to be going ahead on a conservative basis —but the "boom" has passed.

There is no longer an acute housing shortage, although the volume of home building is still high. Commercial construction is increasing, particularly where residential developments call for new shopping centers. Industrial expansion by large corporations in this District is said to have tapered off somewhat. Many small companies, however, still seek new locations or are modernizing existing plants. Real estate is in a buyers' market; the demand is there but prospective buyers and tenants are more "choosey." Mortgage lenders, with a realistic awareness of the current market, are more conservative than formerly.

Housing starts still numerous

Home building during the winter was unusually active, partly because of mild weather but also because builders had a high degree of confidence in their ability to sell to early spring house hunters. Apparently they were right, for by the time April arrived few builders had an unduly large number of completed dwellings unsold.

DRESSING UP THE ROW HOUSE

In Philadelphia a scarcity of ground for the construction of row houses has become a pressing problem for operation builders. A novel approach to this situation consists of a new project involving 1,041 such dwellings constructed in units of ten to a group. The development, costing an estimated $10 million, will cover a 67-acre tract in the northeastern part of the city. Streets will be laid out in a curving style instead of the conventional grid pattern. This will provide more ground per dwelling and reduce traffic hazards usually accompanying straight roadways with right-angle intersections. A new zoning ordinance would classify the area "C-1" residential in place of the usual "D" rating given row housing areas. As this zoning is intended to preclude commercial enterprises, it may overcome much of the objection to building row-type houses on remaining available land, most of which is in the immediate vicinity of single and twin homes.

This does not mean that new houses are selling from blueprints as they did in the heyday of the post-war construction boom. In many cases, builders must advertise them extensively; in others prospective customers have trouble finding buyers for an old property; in still others limited funds for down payments have meant looking around for lenders. Residential builders, for the most part, are aware of the narrower market in which they operate today. For that reason their plans depend on how fast houses sell once they are ready for occupancy.

WHAT THE HOME BUYER WANTS

Here is a definition of just what Mr. and Mrs. Prospective Homebuyer are looking for in their new house. It was developed at a round table conference held recently in New York, attended by representatives of the building industry and editors of several nationally known magazines. In order of importance, the basic requirements are as follows:

1. Price range: $13,500-$15,000.
2. Minimum of three bedrooms.
3. Not less than one and one-half bathrooms.
4. Full cellar under the entire house.
5. Full-size rooms and dining space.
6. Adequate closet space.
7. Hot-air heat and conversion to summer cooling.

This friendly exchange of ideas among people who should have a good knowledge of the subject established beyond doubt that prospective home buyers would not settle for cheaply constructed dwellings in which builders had "cut corners" in any of these departments—not even for a price.

Price trends are mixed

Builders generally are offering new houses at about the same prices as prevailed last year. In the medium brackets some have tended recently to add inexpensive extras and raise selling prices several hundred dollars. This practice has come up against strong consumer resistance. At the other extreme, builders who have "cut corners" find it harder to sell their houses.

Prices of existing houses are still softening. Nearly all realtors interviewed said that people are asking too much for their old houses in every price range. In most areas, listings of desirable properties for sale have been increasing, giving prospective buyers more opportunity to shop around. Price has become the key to sales in this market.

Rental demand holds up

Listings of desirable houses and apartments for rent have not increased significantly in many areas. Tenants are easy to find for units renting at $85 to about $125 a month. The story is quite different in the case of accommodations above this range, however. In that category, vacancy rates have been increasing steadily—the only exception being in scattered defense areas. Rents have been rising slowly for some time. Relaxation of Federal rent controls in many sections has created such pressure for further increases that some communities have passed ordinances to hold rents down.

Commercial activity increasing

New shopping centers in Philadelphia and several smaller cities, including Harrisburg and Wilmington, have attracted some large merchandising firms, and an active demand for space by smaller retailers has followed, as it usually

does. The Trenton and Reading areas experienced a demand of near-boom proportions in this field last fall but lately activity has slackened. Leasing demand for store space is fairly strong everywhere. Offerings in desirable locations have become rather scarce and many long-term contracts are being written. A shortage of one-story buildings with modern facilities appears to be growing throughout the whole Philadelphia area. Requirements for office and professional space are less than at this time last year, and in these categories demand has turned spotty.

Industrial needs easing

The period of high-level industrial building in some parts of this District seems to be over, at least for the time being. A fair amount of activity persists in Philadelphia and nearby areas, where a number of small metal-working firms seek locations. Some of these concerns have been in business only a short time; consequently they do not have long enough earnings records to make them a prime risk for large lenders. In Harrisburg and Wilmington, industrial demand has faded in recent months. Very little new industrial building is in progress in the Trenton area where this type of construction "mushroomed" in the earlier days of the Fairless development. Some substantial plans are in the paper stage but actual operations have been deferred. In the Third Federal Reserve District as a whole, emphasis seems to be shifting from new construction to plant modernization and on-the-site expansion.

Mortgage lending maintains its pace

Mortgage money in this area appears to be adequate, but lenders—the large ones in particular—are proceeding with greater caution. In the case of conventionals, competition for good paper has become keen. FHA loans, too, can be had without difficulty. In some quarters, however, they are regarded less favorably than formerly because of occasional difficulty in obtaining firm commitments. Generally speaking, FHA appraisals are becoming more conservative. VA mortgage money still is hardest to obtain because of the low interest rate. Savings banks are about the only large lenders even mildly interested in this type of financing, and their occasional loans are restricted to depositors in good standing. Large lenders appear to be firmly convinced that interest rates on mortgages generally are too low, that maturity periods should be shortened to about fifteen years. In the opinion of builders, realtors, and lenders alike, a rate increase on VA loans is urgently needed. They think it would be the "shot in the arm" necessary to assure a continued high rate of activity in the residential field.

A steady increase in the mortgage holdings of life insurance companies and savings and loan associations appears to be continuing. Savings banks, too, are active participants in mortgage lending but trust companies have not been adding to their portfolios lately. Individual investors have been financing a larger share of the existing properties. They have helped to move these older houses, as they will extend credit on less conservative terms than the large lenders. Builders can still get construction loans readily on conventional terms, provided they do not have a large number of completed houses unsold.

Material supplies are adequate

Steel for construction purposes now can be had for reasonably prompt delivery. Demand for

brick is exceptionally heavy in the vicinity of several of the smaller Third District cities, and a tight supply situation can develop in the next few weeks. Temporary shortages of plaster-board and one or two items of lesser importance appeared earlier in some areas, but these have been relieved. Supplies of lumber and hardwood flooring, so important in the residential field, appear sufficient. Cement shortages which cropped up last spring are unlikely to recur.

Building material prices increasing

Selective price increases have occurred among the more important building materials in some areas. Builders in the vicinity of Reading tell us that prices are higher for insulation, rock lath, cement, and sand. Philadelphia builders are paying more for plumbing supplies, which rose in price along with copper. Locally, prices of other items are firm and builders do not expect early increases.

CURRENT TRENDS

Business expectations, like chameleons, reflect their environment and can change almost overnight. This was illustrated toward the end of March when the unbridled optimism of the first quarter of 1953 began to give way to a feeling of uneasiness. As has so often been the case since the end of World War II, the event which brought on the change in outlook originated abroad.

This time the stimulus has taken the form of peace feelers by the Russian and Chinese Communists. Genuine or not, the Communist peace offensive has given rise to speculation here concerning possible deflationary effects of an early cease-fire in Korea. The question in businessmen's minds is twofold. First, if peace comes in Korea will we substantially reduce our expenditures on defense? Second, if armament spending is curtailed will consumer and business demands rise sufficiently to prevent a decline from the current high levels of output and employment? Thus many businessmen who a few weeks ago would probably have replied to the question regarding the state of business by saying, "Business is good" might now answer, "Yes, business is good, *but*. . . ."

As usual, the stock market was first to react to the peace overtures. Market values of stocks dipped sharply. This speed of reaction, however, is one reason why short-term movements in the stock market are poor economic indicators. Hurried reactions of this type quite often reflect momentary judgments of traders concerning future action of other traders rather than basic long-run implications of the particular economic events which disturb the market.

Prices of long-term Government securities, on the other hand, strengthened slightly as the outlook for peace in Korea brightened. On April 8, the Treasury disclosed that it would issue approximately $1 billion of 3¼ per cent, 30-year bonds dated May 1. The announcement of the issue, which is to be fully marketable, seems to have been well received. Market reactions during the first few days following the announcement resulted in a slight rise in yields on existing long-

term Government bonds and a substantial increase in yields on the shortest term Treasury securities.

In spite of the mixed trends, the fact nevertheless remains that the change in the international situation has markedly affected both the short- and long-run outlook for business. Business is indeed good, *but*. . . .

Outlook for consumer spending

The sporadic notes of uncertainty heard in various quarters at this writing were considerably less audible to consumers during January and February. If noticeable, they apparently had little effect because the general attitude of consumers seemed to be one of optimism and confidence as to their financial condition and prospects for 1953. Their optimism may have had something to do with expectations of a cut in Federal taxes or with prospects for a balanced Federal budget. Or it may have been influenced by the general stability of consumer prices which prevailed throughout most of 1952 and early 1953. Consumers knew also that credit terms were more lenient than a year or two ago. In other words, the economic and political climate in existence at the time people look ahead has a lot to do with how they feel about the future.

These were some of the factors which influenced responses to the annual survey of consumer finances conducted during January and February for the Board of Governors of the Federal Reserve System by the Survey Research Center of the University of Michigan. Once a year the Board of Governors tries to penetrate the barrier of the near future by asking people about their plans to spend or save and about their attitude toward their financial positions. This, the eighth annual survey of consumer finances, was conducted in sixty-six sampling areas throughout the nation, including the twelve largest metropolitan areas. Consumer spending exerts by far the greatest impact of the three major spending groups. Consumers buy 60 per cent of all goods and services produced, businesses buy 16 per cent, and governments (Federal, state, and local) about 24 per cent.

Consumers are optimistic . . .

Here are some of the preliminary findings of the 1953 survey. As indicated above, the attitude of those interviewed was more optimistic than a year ago. Three out of four felt that prices would remain unchanged or decline during the year. Seven out of ten felt that their own financial situation would remain unchanged or improve during the year. This added up to a feeling of security which was reflected in consumer expectations to purchase cars and major household durable goods in larger volume than in 1952.

The recent reduction in automobile prices made by a leading producer injects a factor not present when the survey was taken. On the surface, lower car prices would seem to invite additional purchases but, on the other hand, some people may wait longer expecting further price cuts.

Consumers plan to purchase major household goods, especially television sets and furniture, in greater numbers than a year ago, but intentions to buy refrigerators seemed to be little changed from last year. Manufacturers and retailers of durable goods should be pleased to learn that the proportion of consumers who felt that times were good for making major purchases has increased considerably since early 1952.

The building industry also would appear to have reason for confidence, to judge from the announced plans of consumers. Those inter-

viewed expected to purchase new and used houses in 1953 to a degree slightly greater than a year ago. Current reports from builders, real estate men, and lenders (as indicated elsewhere in this *Review*) would seem to confirm, at this time, the preliminary findings of the 1953 survey. Purchases of houses in previous years have pretty much followed the reports of intentions.

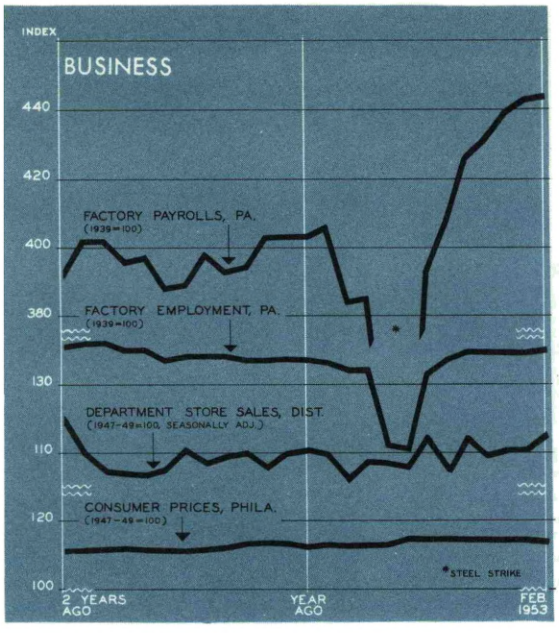
Although these studies have been acclaimed as important contributions to the study of consumer behavior, actual purchases do not, of course, always follow reported intentions. For example, it has been observed that when people are asked about their buying plans for the year, their actual purchases frequently have been greater than their expressed intentions, particularly in the case of automobiles and other selected consumer durables. Fairly reliable in the past, the surveys have proved useful in providing general clues to the strength and nature of consumer demands.

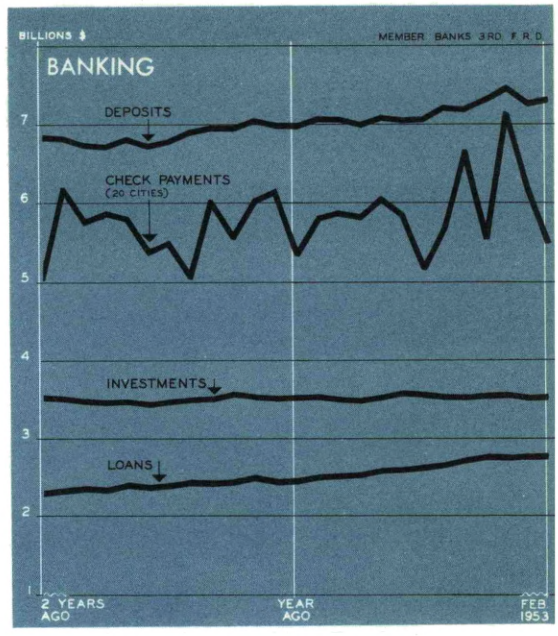
. . . but they can change their minds

But people can change their minds quickly. One of the factors which may make them do this is the growing weight of mortgage and consumer instalment debt. Current figures to watch are collection rates on charge accounts and on instalment accounts. These have been declining in Third District department stores. At rates prevailing in February of this year, it would have taken reporting Third District department stores 2.5 months to collect charge accounts. The rate for the same period last year was 2.3 months. In February of this year it would have taken 7.9 months for the average instalment account in most stores to be completely paid off. In February 1952 it would have taken 6.6 months. This may reflect longer terms as well as slower collections.

In summary, people seem to feel that 1953 will be a good time to buy, that they will have either the money or the credit to fulfill some of their wants. On the other hand, indications suggest that more time and effort will be needed on the part of retailers and others to hold down their receivables and to get people to pay their bills on time.

FOR THE RECORD...



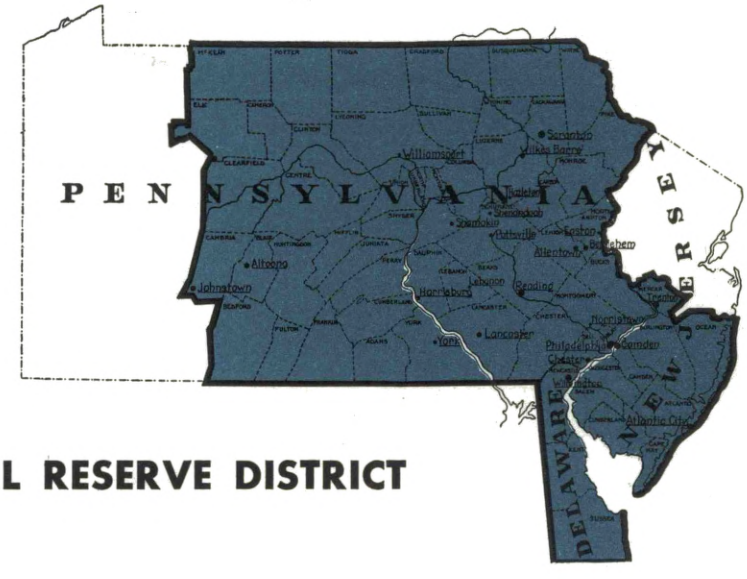


SUMMARY	Third Federal Reserve District — Per cent change — February 1953 from mo. ago	Third Federal Reserve District — Per cent change — February 1953 from year ago	Third Federal Reserve District — Per cent change — 2 mos. 1953 from year ago	United States — Per cent change — February 1953 from mo. ago	United States — Per cent change — February 1953 from year ago	United States — Per cent change — 2 mos. 1953 from year ago
OUTPUT						
Manufacturing production	− 1*	+ 2*	+ 2*	+ 1	+ 9	+ 9
Construction contracts‡	− 5	+58	+58	− 3	+11	+15
Coal mining	0	−20	−26	− 6	−20	−21
EMPLOYMENT AND INCOME						
Factory employment	+ 1*	+2*	+ 2*	+ 1	+ 6	+ 6
Factory wage income	0*	+10*	+10*			
TRADE**						
Department store sales	+ 4	+ 5	+ 1	+ 1	+ 6	+ 2
Department store stocks	− 1	+ 1		− 1	+ 6	
BANKING (All member banks)						
Deposits	+ 1	+ 5	+ 5	0	+ 5	+ 5
Loans	+ 1	+13	+13	0	+11	+11
Investments	0	0	0	− 1	+ 1	+ 1
U.S. Govt. Securities	0	− 1	0	− 2	0	0
Other	+ 1	+ 2	+ 1	0	+ 6	+ 6
Check payments	−11§	+ 2§	+ 1§	−12	+ 3	+ 5
PRICES						
Wholesale				0	− 3	− 3
Consumer	− 1†	+ 1†	+ 1†	0	+ 1	+ 1

*Pennsylvania †Philadelphia §20 Cities
**Adjusted for seasonal variation. ‡Based on 3-month moving averages.

LOCAL CHANGES	Factory* — Employment — Per cent change Feb. 1953 from mo. ago	Factory* — Employment — Per cent change Feb. 1953 from year ago	Factory* — Payrolls — Per cent change Feb. 1953 from mo. ago	Factory* — Payrolls — Per cent change Feb. 1953 from year ago	Department Store — Sales — Per cent change Feb. 1953 from mo. ago	Department Store — Sales — Per cent change Feb. 1953 from year ago	Department Store — Stocks — Per cent change Feb. 1953 from mo. ago	Department Store — Stocks — Per cent change Feb. 1953 from year ago	Check Payments — Per cent change Feb. 1953 from mo. ago	Check Payments — Per cent change Feb. 1953 from year ago
Allentown	+1	−1	−1	+ 6					−10	+ 3
Harrisburg	0	+7	−2	+14					− 8	+ 3
Lancaster	0	+6	+3	+16	−8	+ 5	+16	+5	−10	− 6
Philadelphia	+1	+6	+2	+15	+8	+ 5	+14	−1	−11	+ 2
Reading	0	+3	0	+11	−2	+ 2	+13	+5	− 5	+ 4
Scranton	0	+6	+2	+11					−16	− 3
Trenton	+2	+7	+1	+22	+7	+13	+ 8	0	−11	+ 5
Wilkes-Barre	0	+5	0	+12	−7	+ 2	+ 6	+9	−17	−13
Wilmington	0	+7	−2	+16	−5	− 4	+ 7	+1	−14	+ 7
York	+1	+7	+2	+16	−4	+ 6	+ 7	+5	− 9	+27

*Not restricted to corporate limits of cities but covers areas of one or more counties.



THIRD FEDERAL RESERVE DISTRICT